



CD98 siRNA (h): sc-35033

BACKGROUND

CD98 (4F2, CD98, MDU1, 4F2HC, 4T2HC, NACAE) is a disulfide-linked heterodimer composed of a glycosylated heavy chain and a non-glycosylated light chain. CD98 is a scaffolding protein that interacts with basolaterally expressed amino acid transporters and $\beta 1$ integrins and can alter amino acid transport and cell adhesion, migration and branching morphogenesis. The heavy chain is a type II integral membrane protein. CD98 is expressed on T cells and is upregulated upon T cell activation. CD98 is also present on monocytes and at lower levels on granulocytes, platelets and lymphocytes. Evidence suggests that CD98 may play a role in the regulation of T cell activation and proliferation. Alternate transcriptional splice variants, encoding different isoforms exist for the human CD98 gene.

REFERENCES

1. Quackenbush, E., et al. 1987. Molecular cloning of complementary DNAs encoding the heavy chain of the human 4F2 cell-surface antigen: a type II membrane glycoprotein involved in normal and neoplastic cell growth. *Proc. Natl. Acad. Sci. USA* 84: 6526-6530.
2. Lumadue, J.A., et al. 1987. Cloning, sequence analysis, and expression of the large subunit of the human lymphocyte activation antigen 4F2. *Proc. Natl. Acad. Sci. USA* 84: 9204-9248.
3. Gottesdiener, K.M., et al. 1988. Isolation and structural characterization of the human 4F2 heavy-chain gene, an inducible gene involved in T lymphocyte activation. *Mol. Cell. Biol.* 8: 3809-3819.
4. Warren, A.P., et al. 1996. CD98: a type II transmembrane protein expressed from the beginning of primitive and definitive hematopoiesis may play a critical role in the development of hematopoietic cells. *Blood* 87: 3676-3687.

CHROMOSOMAL LOCATION

Genetic locus: SLC3A2 (human) mapping to 11q12.3.

PRODUCT

CD98 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CD98 shRNA Plasmid (h): sc-35033-SH and CD98 shRNA (h) Lentiviral Particles: sc-35033-V as alternate gene silencing products.

For independent verification of CD98 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35033A, sc-35033B and sc-35033C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CD98 siRNA (h) is recommended for the inhibition of CD98 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

CD98 (E-5): sc-376815 is recommended as a control antibody for monitoring of CD98 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CD98 gene expression knockdown using RT-PCR Primer: CD98 (h)-PR: sc-35033-PR (20 μ l, 458 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Charania, M.A., et al. 2013. Intestinal epithelial CD98 directly modulates the innate host response to enteric bacterial pathogens. *Infect. Immun.* 81: 923-934.
2. Xiao, B., et al. 2016. Combination therapy for ulcerative colitis: orally targeted nanoparticles prevent mucosal damage and relieve inflammation. *Theranostics* 6: 2250-2266.
3. Sung, J., et al. 2020. Preparation and characterization of ginger lipid-derived nanoparticles for colon-targeted siRNA delivery. *Bio Protoc.* 10: e3685.

RESEARCH USE

For research use only, not for use in diagnostic procedures.